Exhibit 10

Table 4.1.1 A: Chemical/Physical Characteristics of Formaldehyde
(Agency for Toxic Substances and Disease Registry (ATSDR) 1999b; Environmental Science Center 2004; Hazardous Substances Data Bank)

Characteristic	Description
Melting/Boiling Point	-92° C /-21° C
Vapor Pressure	Gas
Octanol/Water Partition Coefficient	Log Kow = 0.350
Density	0.815 g/mL at -20° C; Gas: 1.067 (Air = 1)
Solubility	Very soluble in water and polar solvents; up to 55% (freshwater at 20 °C). Soluble in alcohol, ether, acetone, benzene
Soil Sorption Coefficient	Log Koc = 1.567; very high mobility in soil
Bioconcentration Factor	3.2 (estimated based on the chemical's octanol/water partition coefficient); formaldehyde is not expected to bioaccumulate
Henry's Law Coefficient	3.27×10^{-7} atm-m^3/mol @ 25 °C
Biodegradation	Half-Life (in sunlight) 1.6-19 hours producing H_2 and CO or H^+ and HCO^-

4.1.2 Health and Environmental Impacts

Exposure and Effects on Human Health

Because formaldehyde is highly reactive, water soluble and rapidly metabolized, people may experience its toxic, irritating and sensitizing effects at the site of contact, such as the upper respiratory tract, the eyes and the skin (Liteplo et al. 2002). Such symptoms may be experienced by those exposed at their jobs, but also have been reported among students in gross anatomy labs who are exposed to formaldehyde used to preserve human and animal specimens (Kriebel et al. 2001) and occupants of mobile homes constructed largely of particleboard. (Liu et al. 1991) Inhaled formaldehyde is readily absorbed by the upper respiratory tract and can be rapidly metabolized and detoxified into formate by almost every cell in the body (Agency for Toxic Substances and Disease Registry (ATSDR) 1999b). Skin contact results in severe irritation and burns and some formaldehyde may pass through the skin, though it is unlikely to cause systemic effects due to rapid metabolism. Repeated prolonged exposures may result in sensitization of the individual to formaldehyde. Sensitized individuals are more likely to experience contact dermatitis and asthma attacks than the non-sensitized. Formaldehyde exposure may also trigger asthma attacks in individuals with underlying asthma. Headaches, chest pains, and other symptoms may also be linked to exposure to low levels of formaldehyde in indoor air. While unlikely occurrences, ingestion of formaldehyde or very high air concentrations can quickly cause death due to burning of the lungs and subsequent edema ("flooding" of the lungs).

In 2004 IARC moved formaldehyde from the 2A – probable human carcinogen group, to Group 1: sufficient evidence that it is a human and animal carcinogen (International Agency for Research on Cancer (IARC) 2004). This determination was based on several epidemiological studies. Occupationally exposed industrial workers and those handling embalming fluids or preserved tissues were found to have elevated risks of nasopharyngeal cancer. Six of seven studies of embalmers and pathologists and two of three studies of industrial workers also found excess risk of leukemia. It has been hypothesized that because formaldehyde is a natural part of the environment and humans have evolved to cope with such low level exposures, high levels of exposure are required to induce carcinogenesis (Natz 2006). ATSDR and WHO reviewed toxicology and epidemiological studies and did not conclude that formaldehyde causes adverse reproductive and related outcomes, although

1999; Zeljenkova, Szabova 2004). Formaldehyde has been found to be toxic to cells and genes (ATSDR 1999b). Human health effects are summarized in Table 4.1.2 A

Table 4.1.2 A: Human Health Effects

Acute	• Irritation of the eyes, nose, throat, and skin. • Burns. • Narrowing of the bronchi and an accumulation of fluid in the lungs. • Risk of death from severe inhalation exposure: throat swelling, chemical burns to the lungs. • Drinking as little as 30 mL (about 2 tablespoons) of formalin can cause death.
Cancer	• Nasopharyngeal cancer. Possibly leukemia and cancer of the sinuses.
Other chronic	• Sensitization: contact dermatitis and possibly asthma (case reports only) • Central nervous system depression: headache, depression, mood changes, insomnia, irritability, attention deficit, and impairment of dexterity, memory, and equilibrium. • Genotoxic: sister chromatid exchange and chromosomal aberrations. • Cytotoxic

People – workers, children, community members, building occupants – are exposed to formaldehyde through natural sources, and those that are human-made, in many contexts. The main human-made sources of exposure are summarized in Table 4.1.2 B, along with some measured exposure levels in Table 4.1.2 C. Note that many of the values reported in this table of historical exposures come from exposure studies conducted in the 1970's and 1980's; exposure levels today are expected to be lower as a result of the reduction in free formaldehyde in building products and compliance with the 1992 OSHA formaldehyde standard, which lowered permissible exposure levels in workplaces.

rates of products placed in special chambers where temperatures and air flows approximated "typical" indoor air conditions. The following table shows that wood floor finish can contribute significant amounts of formaldehyde to indoor air as can many common products and building materials. Materials such as particleboard that are coated or covered with an impermeable surface emit far less formaldehyde than materials without such a barrier.

Table 4.1.2 D: Formaldehyde Emission Rates from Selected Indoor Sources
(Kelly 1997)

	Typical Conditions (µg/m²/h)
wood floor finish	11,000
fingernail hardener	300
latex paint	9
Cabinet door with acid-cured finish	460
medium-density fiberboard cabinet door	360
Particle board	240
Particle board with vinyl laminate	16
softwood plywood	4
new permanent-press shirts	110
washed permanent-press shirts	42
fiberglass insulation	32

Environmental Effects

Formaldehyde is a natural component of the environment and of the human body. The main effects of formaldehyde in the environment are discussed above as human health effects from exposures that exceed "normal" levels. In outdoor or indoor air, as a combustion product, an industrial pollutant, "off-gassed" from consumer products or building materials, or in smog, formaldehyde can cause acute and chronic health problems for exposed humans. Formaldehyde biodegrades readily in air, water and soil under both aerobic and anaerobic conditions (Hazardous Substances Data Bank). It is not commonly found in drinking water and only in limited quantities in food, such as in cheeses and grains where it occurs naturally and is added to kill pathogens. Formaldehyde in the air breaks down in sunlight during the day into carbon monoxide and formic acid, a component of acid rain. In animals, formaldehyde breaks down into formate and carbon dioxide. Formaldehyde is not bioaccumulative (does not build up in plants and animals).

Occupational and Environmental Standards and Guidelines

Formaldehyde is regulated as a human carcinogen, and classified as either a probable, potential or likely human carcinogen by IARC, OSHA, NIOSH, and EPA's NTP. OSHA's 1992 comprehensive standard requires employers to limit 8-hour exposures to less than 0.75 ppm, but they must take certain protective actions if exposures reach 0.5 ppm. Exposure monitoring, medical surveillance, and medical removal, engineering controls and respiratory protection, training and labeling are some of the extensive requirements of the standard. Formaldehyde is identified as a hazardous and toxic chemical in all media by the EPA and subject to Clean Air Act MACT standards, emissions permits and special disposal requirements.

Many manufacturers of consumer and building products have been reformulating to remove formaldehyde, or improving their products and processes to inhibit the release of formaldehyde. Urea-formaldehyde foam insulation, installed in the early 1970's across North America to conserve

Many manufacturers of consumer and building products have been reformulating to remove formaldehyde, or improving their products and processes to inhibit the release of formaldehyde. Urea-formaldehyde foam insulation, installed in the early 1970's across North America to conserve energy, and later found to contribute to high indoor formaldehyde levels, is restricted in many states, including Massachusetts, and manufacturers have stopped producing it. Beginning in 1985, the Federal Department of Housing and Urban Development restricted the use of wood products made with formaldehyde-based resins in mobile and prefabricated homes to those that met low emission limits as determined in standardized large chamber tests. Industry groups working with government and others have developed emission standards for particleboard and plywood and codified these in several ANSI standards. These standards are similar to HUD's. As a result of these standards and voluntary efforts by industry "manufacturers have reduced formaldehyde emissions from pressed wood products by 80-90% from the levels of the 1980's," according to the U.S. Consumer Product Safety Commission (CPSC 1997). However, over 50% of particleboard products destined for the US market (*e.g.,* furniture) are made in China; it is not known if these imported materials meet emission standards.

European and California restrictions on carcinogens in cosmetics have stimulated many makers to reformulate without formaldehyde (http://www.safecosmetics.org/newsroom/press.cfm?pressReleaseID=15). Because of concerns about formaldehyde's role in indoor air pollution and its impact on Californians' health and the economy, the California Air Resources Board is considering regulations to reduce formaldehyde emissions from consumer products and building materials. In its recent report on indoor air quality, CARB's highest priority recommendation to improve indoor air quality was to replace formaldehyde-emitting wood products with lower emitting ones (California Air Resources Board 2004).

Table 4.1.2 E: Exposure/Environmental Standards and Guidelines

(California Air Resources Board 2004)

OSHA (legal limits)	PEL: 0.75 ppm (averaged over an 8-hour workshift, 40-hour workweek) STEL: 2 ppm (15 minute) Comprehensive standard: requires workplace monitoring, labeling, and training and medical monitoring and engineering controls if employees are exposed above the action level of 0.5 ppm
NIOSH (recommended limits)	REL: 0.016 ppm (10-hr TWA) Ceiling: 0.1 ppm (15-minute) IDLH: 20 ppm Potential occupational carcinogen
ACGIH (recommended limits)	TLV®: Ceiling limit 0.3 ppm A2: Suspected human carcinogen
AIHA ERPG-2 (emergency response planning guideline)	10 ppm (1 hour)
EPA	Hazardous Air Pollutant under CAAA; hazardous waste under CERCLA, RCRA; hazardous substance under CWA; Federal drinking water guidelines: 1000 ug/l; Classification B1 probable human carcinogen
FDA	Food additive permitted in feed and drinking water of animals.
NFPA	(As 37% formalin liquid, no methanol): Health = 3; Flammability = 2; Reactivity = 0
HUD	Particleboard materials shall not emit in excess of 0.3 ppm; plywood 0.2 ppm measured in ASTM large chamber test